Journal of Research in Economics and Finance Management
ISSN (Print): 2959-099X ISSN (Online): 2959-1007
Volume 3, Issue 2, Page 69-88, December 31, 2024

AN EMPIRICAL ANALYSIS OF THE DETERMINANTS OF EXTERNAL DEBT IN PAKISTAN

Muhammad Tauseef Khan[1]
MPhil Scholar
Department of Economics
Qurtaba University of Science and Information Technology, Peshawar, Pakistan
tauseefk062@gmail.com

Behram Zulfiqar[2]
PhD Scholar, Lahore Business School
The University of Lahore
behram.zulfiqar@lbs.uol.edu.pk

Arif Ullah[3]
PhD Scholar, Department of Economics, Institute of Management Sciences Peshawar, Khyber Pakhtunkhwa, Pakistan
arifkhanafridi4425@gmail.com;
arifullahbisp336699@gmail.com

Babar Khalil[4]
Research Scholar
London Metropoliton University
babargondal@gmail.com

Qurat Ul Ain[5]
PhD Scholar, Lahore Business School
The University of Lahore
Quratulainn49@gmail.com

Abstract

Many developing countries mostly depend on external debt to fulfill the developmental and current expenditures. Pakistan, a developing nation as well, relies heavily on foreign debt to boost economic growth, increase social welfare, and close the deficit. Although numerous scholars have attempted to examine the actual causes of external debt, these causes remain unclear and contentious. Thus, the purpose of this study was to look at Pakistan's external debt (ED) factors. The ARDL approach was utilized for estimation, and data from 1976 to 2020 were used. According to this study, ED is negatively and noticeably impacted over the long term (LR) by GDP growth, current account balances (CAB), and total national expenditure. Nonetheless, ED is positively and significantly impacted by the inflation rate, trade, OER (devaluation), and overall debt services. In the short term (SR), ED is negatively but negligibly impacted by GDP growth, inflation rate, and current account balances (CAB). External debt is significantly and negatively impacted by total national expenditure. Nonetheless, commerce, total debt services, and the official exchange rate (devaluation) have a positive and significant impact on external debt. Thus, this study concluded that the long-run (LR) factors influencing Pakistan's external debt are the current account balances (CAB), GDP growth, gross national expenditure, inflation rate, official exchange rate (devaluation), trade, and total debt services. Additionally, the short-term factors that determine Pakistan's external debt are trade, total debt services, the official exchange rate (devaluation), and gross national expenditure. The study's empirical findings suggested that the government should prioritize improving current account balances (CAB), boosting GDP growth, reducing gross national expenditure, maintaining inflation and official exchange rate stability (devaluation), and encouraging exports while discouraging imports.

Keywords: External Debt, Inflation, Government Expenditure, ARDL.

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Introduction

Reducing its external debt load in a way that promotes sustainable growth, and the eradication of poverty is currently one of Pakistan's most urgent development issues. (Awan and others, 2015). External borrowing is mostly driven by developing nations, particularly those in poverty who want to expand their economies. During the period of economic development, when the saving rate is low, the current account deficit is high, and capital imports are crucial to boosting domestic resources, industrialized nations frequently borrow money from outside sources. The nation's high amount of foreign debt, which restricts growth and economic advancement, is currently the main concern for policymakers. (Waheed, 2017).

For all economies, but particularly for emerging nations like Pakistan, sustainable development is crucial. The biggest obstacle to Pakistan's ability to achieve a sustainable GDP is the country's heavy external debt load. (Malik and others, 2010). The primary goal of every developing nation is to close its budget deficit. They employ a variety of strategies to reduce and balance the current deficit, including cutting back on necessary public spending, increasing revenue, and expanding the pool of potential new investments. (Malik & Attique, 2012). Due to a lack of resources, government officials have borrowed money from the World Bank, IMF, Asia Development Banks, and other institutions to fund government agencies and boost GDP and economic growth. This is known as external debt.

In a worldwide situation, external debt is justified to a specific degree and subject to specific limitations. Let us say, nevertheless, that the debt exceeds this range and moves past these restrictions. In that scenario, it exacerbates a significant flaw or turns into a catastrophe, which has a negative impact on the whole country's economy. Al-Fawwaz (2016)The two (2) categories of equity financing and debt finance comprise the key avenues via which developing nations fund their deficit. Notes, bills, and bonds are all part of debt financing. In this instance, the borrower is required to settle the debt's face value, interest rate, and any other factors that affect its financial standing. Conversely, portfolios and direct investment are types of equity financing. (Krugman et al., 2012). The regime's primary source of funding for development and the advancement of important public objectives is examined as external debt. Therefore, when a nation experiences a shortage of funds and needs outside funding, external debt results. (2015) Siddique et al. According to Umaru et al. (2013), one of the main factors influencing capital structure in any global economy is debt. The distinction between saving and investing is eliminated since the government borrows money to cover its expenses when there is a deficit. According to Al-Fawwaz (2016), the budget deficit is the primary cause of debt because domestic revenue cannot cover capital and current expenditures. Based on this foundation, Jordan is grateful for plans to expand and make up the deficit. Unfortunately, the government of Jordan fails to meet development goals, which results in borrowing costs that are higher than revenues. The primary purpose of external debt is to bridge the gap between necessary investments and public savings. Developing nations have numerous typical advantages, such as reduced production, limited human resources, and institutional problems (OKE & Sulaiman, 2012) (Antique & Malik, 2012).

ISSN (Print): 2959-099X ISSN (Online): 2959-1007
Volume 3, Issue 2, Page 69-88, December 31, 2024

Another significant factor that increases the weight of foreign debt is a corrupt administration. Instead of investing in foreign debt to improve the lives of many impoverished people, this kind of administration wastes money on its opulent pursuits. Because of these factors, most inflating nations that are experiencing different external debt problems are the target of these determinants' requests for restructuring, debt reduction, and relief. By the end of 2010, Pakistan's foreign debt had increased by 55.87 billion dollars from 37.800 billion dollars in 2000. Pakistan's foreign debt rose to 59.47 billion dollars in 2011. The amount of external debt is currently even higher than $60.00 billion. The current study adds new variables, such as the currency rate and term of trade, to examine numerous factors that influence foreign borrowing in Pakistan. Additionally, it investigates LR and the brief connections between the series. (Awan and others, 2015).

One of the developing nations that relies on ED to raise GDP, eradicate the deficit, and enhance societal well-being is Pakistan. The causes of ED are still unclear and debatable. Several academics and economists have attempted to look into the precise causes of ED; Al-Fawwaz (2016) used the ARDL technique and concluded that the key causes of ED in the case of Jordan for the years 1990–2014 are trade, term of trade (TOT), OER, and GDP. In 2018, Gokmenoglu and Rafik conducted research on the Malaysian economy. Using the VECM technique, they concluded that the primary factors influencing external debt are GDP, exchange rate (OER), capital expenditure, and current expenditure. As a result, there is disagreement among academics regarding the causes of ED and its severity. Additionally, there is no current study that uses the 1976–2020 data set and estimates using ARDL methodologies. Prior research in Pakistan did not consider the combination of factors that determine external debt, but this study does. For the past 70 years, Pakistan's economy has also been beset by external debt, which has grown yearly. This study will be conducted to identify the primary causes of ED in Pakistan. Therefore, the current study aims to determine if the factors have a positive or negative impact on Pakistan's external debt and its impact on ED.

Every government seeks to reduce or eliminate the dependability of external debt. To reduce external debt, the government and academics employed a variety of macroeconomic indices. This analysis is unique in a number of respects. To start, no other updated study has been done that uses the 1976–2020 data set and ARDL methodologies for estimating. Second, unlike other studies conducted in Pakistan, this study considers the mix of factors that influence external debt.

As a result, this study also investigates the actual factors contributing to ED in Pakistan. In addition to being more advantageous for Pakistan and all other developing nations ensnared in external debt, this study will significantly enrich the body of existing literature.

Rationale of the Study

One of the biggest problems facing emerging economies like Pakistan is the weight of external debt. Trade imbalances, fiscal deficits, and low domestic savings frequently cause considerable amounts of foreign borrowing. By investigating the long-term and short-term factors that influence foreign debt using up-to-date data and sound econometric methods, this study aims to fill research gaps. It seeks to aid in the

creation of policies that can direct Pakistan's sustainable debt management procedures (Chenery, 1967; Al-Fawaz, 2016).

Problem Statement

Despite a large body of research on the subject, the factors influencing external debt in Pakistan are still unclear and contentious. Although foreign debt is necessary to close savings and budgetary imbalances, taking on too much debt can cause volatility in the economy and hinder growth. Few studies have integrated important macroeconomic and policy variables in the Pakistani context or used updated datasets (Antique & Malik, 2012). To close this gap, this study looks at the factors that influenced external debt from 1976 to 2020.

Research Questions

1. What are the significant determinants of external debt in Pakistan?
2. How do macroeconomic variables like GDP growth, trade openness, and inflation influence external debt?
3. What are the differences in the short-run and long-run impacts of these determinants on Pakistan's external debt?

Research Objectives

1. To identify the macroeconomic factors influencing Pakistan's external debt.
2. To analyze the short-run and long-run relationships between external debt and its determinants.

Theoretical Framework

The study's foundation is the "Two-Gap" concept (Chenery, 1967), which describes how savings and foreign exchange imbalances lead to a need for outside funding. The "Tax Smoothing" model (Barro, 1979) complements this by rationalizing borrowing to moderate fiscal shocks. The way these theories interact offers a prism through which to assess the dynamics of Pakistan's external debt.

Conceptual Framework

The conceptual framework incorporates foreign debt as the dependent variable, which is impacted by independent factors such as government spending, trade, GDP growth, inflation, and the current account balance. The Autoregressive Distributed Lag (ARDL) model is used to assess the framework and account for both short-term and long-term impacts.

Significance of the Study

This research is essential for policymakers to comprehend the dynamics of external debt and develop efficient management methods. The results will assist in

ISSN (Print): 2959-099X ISSN (Online): 2959-1007
Volume 3, Issue 2, Page 69-88, December 31, 2024

coordinating trade and fiscal policies to lessen dependency on foreign borrowing, foster economic expansion, and maintain financial stability (Waheed, 2017).

Literature Review

The "Two Gap" model, which considers the interaction between savings constraints, is essential in amplifying the process by which external debt accumulates. According to the approach, borrowing is permissible when the difference widens, and a nation runs the risk of experiencing a current account imbalance. Chenery (1967). According to Willems & Zettelmeyer's (2022) empirical and theoretical research, the US's external debt is caused by short-term increases in income. They also examined whether debt and inflation are positively correlated. Bacha (1990) included the fiscal gap (FD) in the Two (2) Gap Model since it is thought to be a significant obstacle to the GDP of emerging nations. This is because FD may require a significant amount of ED.

Government budgetary limitations are the root cause of the FD, especially when the government lacks the funds to pay for the expenditure and is unable to collect enough taxes. In these situations, borrowing from abroad is essential to pay for government expenditures. Adamu (2017) investigated the causes of Nigeria's foreign debt and found that the government deficit, interest rates, terms of trade, and the real-ER increase in the external borrowing ratio are the main contributing factors. According to Tiruneh (2004), capital flight and TDS are the main drivers of external borrowing for under-developing nations. They also investigated income instability and the saving gap as contributing causes of external debt.

Rising nations do not have enough savings to cover the necessary investment to reach desired growth rates. A lack of foreign currency may force governments to look for outside finance, which can result in debt in the following ways. First, the currencies of underdeveloped countries are hard to exchange. Second, offshore borrowing can help finance a nation's imports by filling the gap between necessary import expenses and actual export earnings needed for investment. This is particularly true if borrowing is required to close the import-export deficit because most nations have currencies that are difficult to exchange. Since exports usually do not generate enough foreign exchange to pay for imports, borrowing money from outside becomes a crucial way to quickly get imports. (Nicolaidou & Chiminya, 2015).

Additionally, from the perspective of the fiscal imbalance, the tax smoothing model clarifies how debt builds up. (Nicolaidou & Chiminya, 2015)Based on Barro's (1979) theory of public expenditure, taxes, and debt, the fundamental premise is that the government should use debt to cover temporary economic shocks and taxes to finance long-term ones. One characteristic that sets tax smoothing theory apart is the disparity between short-term and long-term changes in government spending.

Persson and Tabellini (2002) claim that while tax smoothing theory can account for deficits and debt in times of conflict, it is unable to explain why they continue to exist in times of peace. This study aims to explain the persistence and range of debt levels in African countries. These huge disparities in debt make it difficult for tax smoothing models to account for different debt levels between

nations. Given that public policies reflect the political conduct of politicians to some extent, these inequalities may be explained by variations in political institutions across different countries. Separately, models of political economy can explain how nations accumulate debt. Strategic concerns among politicians may lead to inefficiently large government deficits and debt accumulation. The idea of strategic debt accumulation holds that by increasing debt levels, current policymakers can restrict the spending of future policymakers.

Ferry (2023) asserts that different administrations in office at various times may exploit this tactical opportunity and that this political ploy may result in debt growth that is higher than desirable. Furthermore, debt may arise from political parties' divergent beliefs in government. The concept of the political budget cycle, which was first proposed by Balboni et al. (2023) and is separated into partisan models and opportunistic policymakers, falls under this category. These opportunistic politicians take advantage of voters and use budget imbalances to boost their prospects of winning reelection. Models of opportunistic policymaking imply that voters do not consider the government's intertemporal budget constraint.

Opportunistic politicians who want reelection are accused of taking advantage of voters by increasing expenditures to appease them, and people are accused of overestimating the benefits of current spending while underestimating future tax burdens. These models can explain expansionary fiscal policy during election seasons because voters do not penalize politicians for pursuing policies that result in excessive deficits and high debts, even though they have been criticized for not always underestimating future tax burdens. After all, they understand that an increase in expenditure or debt before an election will be passed on to them later.

Since opportunistic models may represent the opinions of political leaders, they shed light on how debt builds up prior to elections, highlighting the importance of political problems in comprehending regional indebtedness. Additionally, some theories contend that delayed stabilization due to government decision-making fragmentation may be another factor contributing to an economy's debt accumulation. Disagreements among policymakers, particularly when multiple political players are engaged, and the fact that no single individual or interest group controls policy at any given time can result in inefficient deficits that persist. This is because each policymaker or interest group delays committing to fiscal reform. After all, they believe that others will bear a massive portion of the cost. (Nicolaidou & Chiminya, 2015)

Each party in the negotiation process may decide to delay obtaining a better deal for themselves, which could improve a group's expected outcome at the expense of making the overall economic position worse. (Besley & Persson, 2023). Even while there are policies that are recognized to help everyone, the result is delayed stability. Multiple parties representing various voter segments form coalition governments, and when more policies are implemented, more money is spent, and more revenue is needed to pay for those expenditures, which leads to the growth of the national debt.

Ajayi and Oke (2012) investigate how ED affects Nigeria's GDP. When the OLS and multiple regression techniques were used, the results showed that ED had a

ISSN (Print): 2959-099X ISSN (Online): 2959-1007
Volume 3, Issue 2, Page 69-88, December 31, 2024

detrimental effect on both national income and per capita income. Blackmon (2014) investigates the causes of the substantial proportion of government export-credit institutions that are developing debt payment organizations. He concludes that the primary cause of the LR debt issue in emerging nations is debt repayment to borrowers.

Given Pakistan's high rates of violence, electoral rivalry in recent democratic regimes, and disjointed governments, these concepts are especially pertinent there. All of this could result in debt accumulation. To capture the actions of political leaders that could result in increasing debt accumulation, we employ variables in this study that reflect both economic and political economy aspects. While political issues will be assessed using political economy theories, gap models will be helpful in determining economic factors that could contribute to debt accumulation.

Determinants of External Debt

Eichengreen and Portes (1986) undertook cross-section regression on twenty-three developing countries that sought external credit between 1930 and 1938. The authors discovered that while export instability and the stage of trade openness had a statistically insignificant impact on external debt, Gross Domestic Product had a highly significant impact on external borrowing, meaning that economic growth is central to outward borrowing.

Using non-linear calculations, Hajivassiliou (1987) examined cross-sectional data from seventy-nine developing nations between 1970 and 1982. The findings noted that interest rates, imports, and the service-to-export ratio all had a positive relationship with external debt. This implies that such economic factors as low interest rates and high imports may enhance external debt in developing countries.

Maghyereh and Omet (2002) employed the ARDL method to examine the trade openness, external debt, and GDP nexus for Jordan for the period from 1990 to 2014. Their evidence-based research showed that Trade openness had positive effects on GDP but negative effects on external debt. This, in turn, means that increasing trade openness could help to alleviate the problem of external debts since economic growth is more closely related to trade liberalization than to indebtedness.

Tiruneh (2004) targeted sixty poor nations between 1982 and 1998, using both random and fixed-effect estimates. Some of the results are that external debt causes include capital flight, total debt service, imports, low economic growth, and income Volatility. These factors explain why low-income countries are sensitive to external debt due to instabilities in their economies.

Considering our earlier focus on institutional and socio-political factors, Colombo and Longoni (2009) examined sixty-one developing countries' external debt-building processes from 1970 to 2000. They also pointed out that such matters are core drivers of external debt, implying that international lending might be pricey to countries with not-so-robust institutions and politically insecure environments.

Paudel and Perera were able to work on the Sri Lanka average, taking a fitting period from 1950 to 2006, using the Coh Johansen co-integration method.

They revealed that external debt has a significant negative relationship with the GDP and concluded that borrowing in Sri Lanka had negative effects on economic growth. This proves that external debt should be effectively managed so as not to affect the long-run economic impacts.

Loganathan et al. (2010) employ vector correction models (VCM) to examine the sustainability of Malaysia's external debt from 1988 to 2008. The study arose with the conclusion of determining viable, sustainable external borrowing of the given country, particularly with balance of payment, government revenue, and government reserve ratio. This is an indication that, with sound economic policies, the external debt is well-containable without causing a riff on the stability of the economy.

Awan et al. (2011) conducted a study using the Johansen technique. The researcher estimated how external debt, TOT, OER, and fiscal deficits affected Pakistan's fiscal balances from 1972 to 2008. They found that external debt was significantly related to OER but not fiscal deficits.

Constraint: Source of financing: According to their study, while there was a strong relationship between external debt and OER, the fiscal deficit did not have a material effect on external debt. This suggests that the process of external debt accumulation is more connected with the exchange rate movement than with fiscal policy.

Using OLS regression, Antique and Malik (2012) examine the effect of domestic debt on external debt in Pakistan over the 1980 – 2010 period. Indicating that the importation of domestic debt may exacerbate the effects of external debt on the economy, they established a movement of domestic debt as a negative indication of the external debt on output growth.

In Jordan's specific case, Al-Zeaud and Al-Awawdeh (2014) sought to discover the nature of the relationship between the four variables using multiple regression analysis over the period 1990-2012. Their research showed a positive relationship between external debt and economic output growth, which gives some information on the ability of external borrowing to aid economic development in Jordan.

Bunescu (2014) applied co-integration tests to East African societies from 1970 to 2010. In line with these hypotheses, this study discovered a negative correlation between external debt and GDP in East African countries. This supports earlier findings that high external debts undercut the economic growth of countries in the region and the need to produce sound debt management policies.

From 1914 to 2014, Al-Fawwaz's ARDL model analyzed the impact of Jordan's trade openness, terms of trade, open exchange rate, GDP per capita and external debts. The study established that trade variables are positively correlated with external debt. While trade liberalization might encourage external borrowing, this was accompanied by a relative increase in the debt burden vis a visa of GDP per capita, which exhibited an inverse relationship.

ISSN (Print): 2959-099X ISSN (Online): 2959-1007
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Pyeman et al. (2016) evaluated Malaysia from 1972 to 2012 by employing the Granger-causality tests and least square regression. In another study, they found that external debts depend on foreign debt, exports, GDP and FDI. This supports the fact that a healthy economic environment is central to external borrowing.

Waheed (2017) applied POLS to analyze the effect of oil prices on external debt in twelve exporting and importing countries from 2004 to 2013. this led the study to conclude that oil prices played a role in the OPEC country's external debt, meaning that the autoregression moving average of global oil prices does affect the current account, the number of non-oil exports, the capital flow and the level of external debt in the oil-exporting countries.

Kamu and Rafik (2018) investigated Malaysia from 1970 to 2013 using co-integration, vector error, co-integration, and the Granger causality test. Their findings revealed that our hypothesized positive relationship between GDP, exchange rate and external debt did not hold in the context. However, external debt was pointed to exert a negative effect on the exchange rate.

Zulkefli (2019) used diagnostic tests from 2007 to 2016, in addition to stationary tests, to assess Malaysian data. The research conducted in this paper found that corruption, total debt service, and military expenditures were insignificant determinants of external debt, while other macroeconomic policies could be the key determinants.

Augustine and Kumar (2020) used the ARDL model to examine the impact of currency depreciation on external debt in India over the period 2001–2018. They further found evidence that currency depreciation led to an increased external debt burden, particularly in the world's countries with depreciating currencies.

Methodology

Nature of Research and Data

The World Development Indicators (2024) provided the secondary data used in this study for the years 1976–2020.

Model specification

This approach examines the fundamental causes of ED in Pakistan. The study's dependent variable is external debt, while the other variables—inflation, trade, official exchange rates, GDPpc, government national expenditure, tax deducted from resources, and current account balance—are independent. Al-Fawwaz (2016) also used GDPpc and term of trade (TOT) to examine the primary causes of ED in Jordan. The following were utilized in this study and are also used by other researchers.

$$ED_t = \beta_0 + \beta_1 TDS_t + \beta_2 CAB + \beta_3 T_t + \beta_4 OER_t + \beta_5 GDPpc_t + \beta_6 GNE_t + \beta_7 INF_t + \mu_t \quad \ldots\ldots\ldots\ldots (1)$$

Variable descriptions

Table 01: Description of Variables			
S.No	Variables	Data Period	Symbol
1	External debt stocks (% of GNI)	1976-2020	ED
2	Total debt service (% of GNI)	1976-2020	TDS
3	Current account balance (% of GDP)	1976-2020	CAB
4	Trade (% of GDP)	1976-2020	T
5	Official exchange rate (LCU per US$, period average)	1976-2020	OER
6	GDP per capita growth (annual %)	1976-2020	GDP
7	Gross national expenditure (% of GDP)	1976-2020	GNE
8	Inflation, consumer prices (annual %)	1976-2020	INF

Econometrics techniques

This work examined the stationarity issue in the data from Dickey and Fuller (1979) using the ADF test. The autoregressive distributive lag model, created by Pesaran et al. (2001), was utilized to check the coefficient, and the ARDL bound test was employed to ascertain the relationship between the variables.

The ARDL Technique

Certain variables had stationary data at level 1(0), whereas others had stationary data at first difference 1(1). Pesaran et al. (2001) created the ARDL technique, which is better suited for estimating when the variables' order of integration is mixed. Compared to alternative methods, the ARDL methodology offers numerous benefits.

1. ARDL's suitability for mixed-order integration is its primary benefit.

2. It provides accurate findings in tiny samples.

3. The bound test approach is employed to demonstrate the variables' cointegration (Pesaran et al., 2001).

Equation (2) in ARDL Form

$$ED_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i} CAB + \sum_{i=1}^{n} \beta_{2i} T_{t,i} + \sum_{i=1}^{n} \beta_{3i} GDPpc + \sum_{i=1}^{n} \beta_{4i} GNE_{t,i} + \sum_{i=1}^{n} \beta_{5i} INF_{t,i} + \sum_{i=1}^{n} \beta_{6i} OER_{t,i} + \sum_{i=1}^{n} \beta_{7i} TDS_{t,i} + \mu_t \ldots \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Equation (3) in ARDL Bound techniques form.

$$\Delta ED_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i} \Delta CAB_{t,i-1} + \sum_{i=1}^{n} \beta_{2i} \Delta T_{t,i} + \sum_{i=1}^{n} \beta_{3i} \Delta GDPpc_{t,i} + \sum_{i=1}^{n} \beta_{4i} \Delta GNE_{t,i} + \sum_{i=1}^{n} \beta_{5i} \Delta INF_{t,i} + \sum_{i=1}^{n} \beta_{6i} \Delta OER_{t,i} + \sum_{i=1}^{n} \beta_{7i} \Delta TDS_{t,i} + \gamma_1 CAB_t + \gamma_2 T_t + \gamma_3 GDPpc_t + \gamma_4 INF_t + \gamma_5 GNE_t + \gamma_6 OER_t + \gamma_7 TDS_t + \mu_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

ISSN (Print): 2959-099X ISSN (Online): 2959-1007
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Result and Discussion

Table 02 confirms the current account balance's (CAB) lowest fluctuation and the official exchange rate's (ORE) largest. According to the skewness values examined, the official exchange rate is skewed, and external debt is low. Resources, current account balance, OER, GDP (per capita), GNE, and inflation all have low rates of taxation.

Table 02: Descriptive Statistics

	ED_t	CAB_t	$GDPPC_t$	GNE_t	INF_t	OER_t	TDS_t	$TRADE_t$
Mean	40.838	-2.833	2.0337	106.180	8.141	52.397	3.627	32.149
Median	41.421	-3.075	2.074	106.445	7.844	45.046	3.713	32.868
Maximum	55.900	4.823	6.695	112.038	20.282	161.838	6.814	38.499
Minimum	25.075	-9.204	-1.843	99.060	2.529	9.000	1.415	25.306
Std. Dev.	9.505	2.652	1.919	3.527	3.616	40.082	1.401	3.595
Skewness	0.180	0.592	0.019	-0.298	0.708	0.871	0.231	-0.308
Kurtosis	3.315	5.179	0.350	2.033	5.753	5.700	1.246	1.977

Source: World Development Indicator (2024)

Correlation Matrices

Table 03 indicated a positive correlation between ED and CAB, inflation rate, and total debt services. In addition, there is a negative relationship between external debt and trade, GDP, official exchange rates, and total national expenditure.

Table 03: Correlation Matrix

Variables	ED_t	CAB_t	GDP pct	GNE_t	INF_t	OER_t	TDS_t	$TRADE_t$
ED_t	1							
CAB_t	0.074	1						
GDP pct	-0.152	-0.054	1					
GNE_t	-0.290	-0.493	0.123	1				
INF_t	0.028	-0.477	-0.281	0.175	1			
OER_t	-0.667	0.210	-0.309	-0.004	-0.016	1		
TDS_t	0.792	0.042	-0.148	-0.283	0.040	-0.453	1	
$TRADE_t$	-0.338	-0.416	-0.046	0.060	0.548	-0.441	0.418	1

Unit Test Result

Table 4 shows the results of the ADF and PP tests. This indicates that while the CAB, GDPpc, and Inf are stationary at the level, the external debt, GNE, OER, TDS, and trade are stationary at the first difference.

Table 04: Augmented Dickey-Fuller test and Phillips-Perron Result					
Variables	ADF Test		PP TEST		Order of Integration
	At Level	1st Dif	At Level	1st Dif	
ED_t	-1.6446 (0.4518)	-5.8135* (0.0000)	-1.7122 (0.4182)	-5.7695* (0.0000)	I(1)
CAB_t	-3.0434** (0.0386)	---------	-3.0434** (0.0386)	--------	I(0)
GDP pct	-4.5274* (0.0007)	---------	-4.4970* (0.0008)	--------	I(0)
GNE_t	-2.0238 (0.2759)	-6.4795 (0.0000)	-2.0647 (0.2594)	-6.5396 (0.0000)	I(1)
INF_t	-3.2168** (0.0256)	--------	-3.3200** (0.0199)	--------	I(0)
OER_t	2.9276 (1.0000)	-4.0869* (0.0026)	3.4065 (1.0000)	-3.1904** (0.0274)	I(1)
TDS_t	-2.2945 (0.1782)	-9.6911 (0.0000)	-2.2105 (0.2055)	-9.6577 (0.0000)	I(1)
$TRADE_t$	-2.2692 (0.1861)	-6.5141 (0.0000)	-2.3260 (0.1686)	-6.5195 (0.0000)	I(1)
Note: *,**, and *** indicate 1%, 5%, and 10% levels of significance, respectively.					

Regression Results

Table 05 indicates that current account balances (CAB) have a significant and unfavorable impact on foreign debt over the long term (LR). The foreign debt will decrease by 0.78 percent for every percentage increase in the current account balance. Muli and Ocharo (2018) provided contradictory results, but Ibhagui (2018) provided the same results. In a similar vein, GDP growth has notable and detrimental effects on external debt. The external debt will decrease by 0.81 percent for every percentage increase in GDP growth. While Muli and Ocharo (2018) produced contradicting results, Cuddington and Asilis (2009) and Jafri (2008) produced the same results. ED is significantly and negatively impacted by gross national expenditure. The external debt will decrease by 0.88% for every percentage increase in the gross national expenditure. While Mahdavi (2004) produced the opposite results, Cuddington and Asilis (2009) produced the same results.

In a similar vein, external debt is positively and significantly impacted by the inflation rate (INF). The external debt will rise by 0.47% for every percentage increase in the inflation rate (INF). Cuddington and Asilis provided the same results (2009). Additionally, there is a positive and significant impact on external debt from the official currency rate (devaluation). The external debt will increase by 0.05 percent for every unit increase (depreciation) in the official currency rate. The findings of Muli and Ocharo (2018) were the contrary. Overall, debt services have a positive and significant impact on ED. The ED will increase by 1.66 percent for every percentage increase in total debt services. Saheed et al. (2015) reported the same results. Since Pakistan's exports consistently exceed its imports, the trade has a positive and significant impact on ED (external debt). The external debt will increase by 0.55 percent for every percent increase in trade. Ibhagui (2018) produced the same results. However, Abbas and Wizarat (2018) produced the opposite results.

The current account balances (CAB) have a negligible but unhelpful impact on ED in the short term (SR). Similarly, GDP expansion affects ED in an unhelpful

ISSN (Print): 2959-099X ISSN (Online): 2959-1007
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but unimportant way. ED is significantly and unhelpfully impacted by gross national expenditure. The external debt will decrease by 0.95% for every percentage rise in gross national expenditure. The impact of the INF on external debt is negligible yet unproductive. Additionally, there is a positive and significant impact on external debt from the official currency rate (devaluation). The external debt will increase by 0.15% for every unit drop (depreciation) in the official exchange rate. Overall, debt services have a positive and significant impact on ED. External debt will rise by 1.62% for every percentage increase in overall debt services. The external debt will rise by 0.40 percent for every percent increase in trade. The ECM value indicates a 53% level of adjustment.

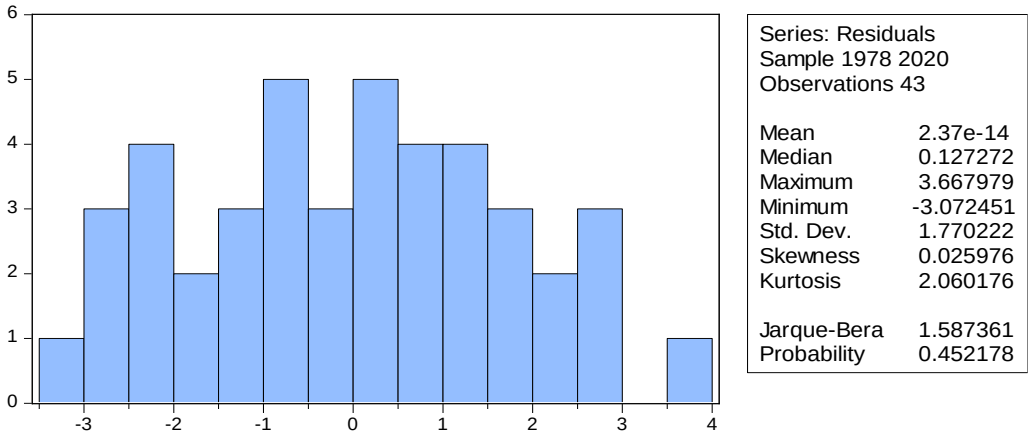
Table 05: Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long run Results				
CAB_t	-0.7784*	0.2386	-3.2621	0.0029
GDP pct	-0.8116*	0.2240	-3.6233	0.0011
GNE_t	-0.8789*	0.2662	-3.3010	0.0026
INF_t	0.4727*	0.1393	3.3922	0.0021
OER_t	0.0517**	0.0192	2.6916	0.0119
TDS_t	1.6583*	0.4431	3.7426	0.0008
$TRADE_t$	0.5547**	0.2015	2.7533	0.0102
C	50.9005**	20.7586	2.4520	0.0207
Short Run Results				
$D(CAB_t)$	-0.1083	0.2603	-0.4159	0.6801
D(GDP pct)	-0.2460	0.1893	-1.2991	0.2026
$D(GNE_t)$	-0.9480*	0.2525	-3.7541	0.0007
$D(INF_t)$	-0.2192	0.1505	-1.4565	0.1544
$D(OER_t)$	0.1453***	0.0857	1.6957	0.0991
$D(TDS_t)$	1.6167*	0.4964	3.2568	0.0026
$D(TRADE_t)$	0.4002**	0.1842	2.1727	0.0369
ECM_{t-1}	-0.5268*	0.0928	-5.6776	0.0000
ARDL Bounds Test-Statistics		3.3225***		
		Critical Value Bounds		
		Significance Level	I0 Bound	I1 Bound
		10%	2.03	3.13
		5%	2.32	3.5
		2.50%	2.6	3.84
		1%	2.96	4.26
Note: *, **, and *** indicate 1%,5%, and 10% levels of significance, respectively.				

Diagnostic Tests Results

Table 01: Diagnostic Test Results			
Test	Statistic	Value	Probability value
Breusch Godfrey (BG) Serial Correlation LM Test	F-statistic	1.3213	0.2841
Breusch Pagan Godfrey (BPG) Heteroskedasticity Test	-do-	0.6553	0.7957
Ramsey RESET test	t-statistics	0.6501	0.5211
	F-statistic	0.4226	0.5211

Figure 1: Normality Test



Stability Tests Results

Figure 2: CUSUM Test Results

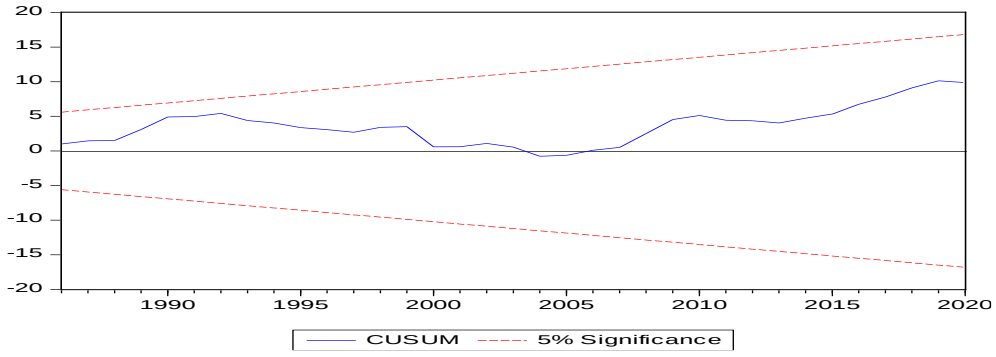
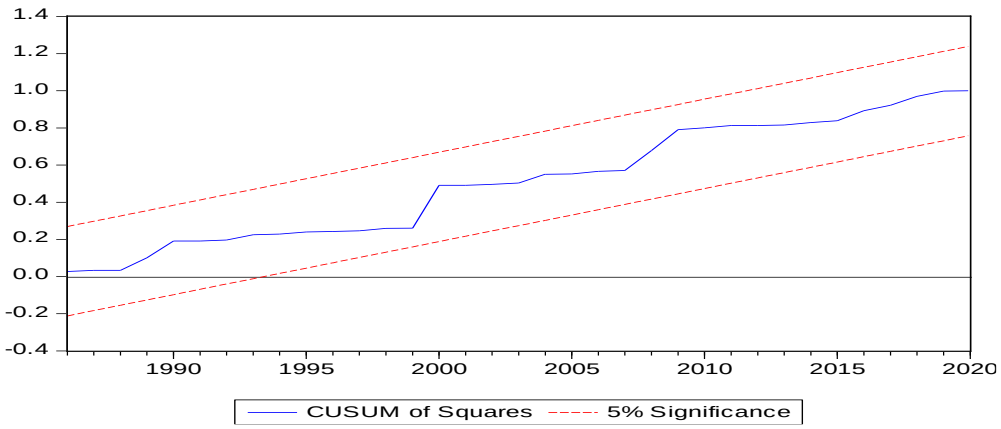


Figure 3: CUSUM of Square Test Results

ISSN (Print): 2959-099X ISSN (Online): 2959-1007
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Conclusion

One of the developing nations that relies on ED to boost economic growth, enhance social welfare, and close the gap between national savings and necessary investment is Pakistan. The causes of ED have not yet been identified. Thus, the primary goal of the study is to use data from 1976 to 2020 and ARDL estimate techniques to examine the factors that contribute to ED in Pakistan. According to this study, GDP growth, gross national expenditure, and current account balances (CAB) all have negative and significant long-term (LR) effects on ED. Nonetheless, there are positive and significant effects on external debt from the official currency rate (devaluation), inflation, trade, and overall debt services. The GNE significantly and negatively impacts external debt. Nonetheless, commerce, total debt services, and the official exchange rate (devaluation) all significantly and favorably impact external debt. Accordingly, this analysis concluded that the current account balances (CAB), GDP growth, gross national expenditure, inflation rate, an official exchange rate (devaluation), trade, and total debt services are the long-term determinants impacting Pakistan's external debt. Additionally, the short-term factors that determine Pakistan's external debt are trade, total debt services, the official exchange rate (devaluation), and gross national expenditure.

Recommendations

- The government should concentrate on enhancing current account balances (CAB) considering the empirical findings.
- The government must prioritize raising GDP growth.
- The administration wants to concentrate on boosting exports and discouraging imports; it must concentrate on reducing gross national expenditure.

Limitations

- The study used secondary data, which could be biased or inaccurate by nature.
- The scope is restricted to Pakistan, which limits the findings' applicability to other developing countries.

- The long-term relationships assumed by the ARDL approach might not stand up in the event of structural problems.

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